

Dependency of electron self-injection for the acceleration in laser-pulse-wakes on the laser pulse duration, its focusability, and target density

A. Zhidkov

Photon Pioneers Center, Osaka University

I have fixed the laser pulse energy and made PIC calculations varying other parameters. This is important to understand fluctuation of characteristics of electron bunches in the laser wake-field acceleration.

Computers	SX8
Run	500 hours
Memory	20 GB

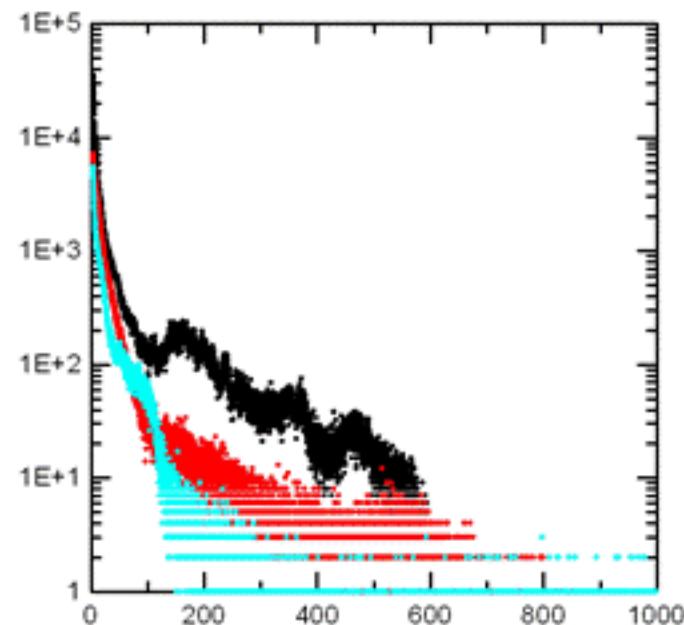


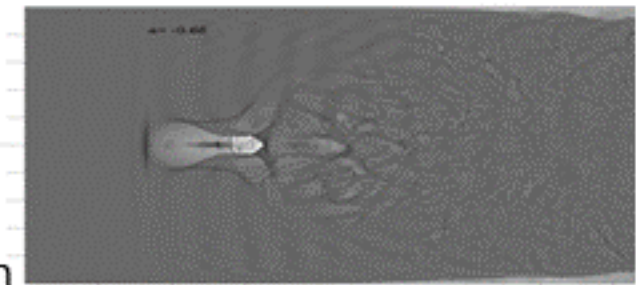
Fig.2

Electron momentum distributions for $\tau = 10$ (black), 30 (blue), and 100 (red) fs after 4mm acceleration

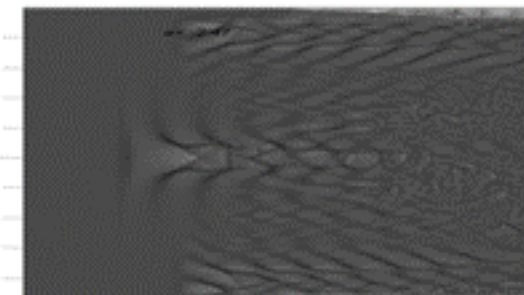
Electron density in uniform plasma irradiated by a 1J laser pulse with its duration $\tau = 10$ fs, 30 fs, and 100 fs

Fig.1

(a)



(b)



(c)

